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INSTITUTES, LABORATORIES HELP IMPROVE
TURBINE-BUILDING TECHNOLOGY

BROADENS PRODUCTION, IMPROVES TECHNIQUES -- Leningradskaya Pravda, No 79, 2 Apr 50

During 1949 the Leningrad Nevskiy Plant imeni Lenin designed and produced 16 new types of turbines and turbomachines. Some of these machines are 50 percent lighter than older models, but have a comparatively greater efficiency. Working under Director B. Moykin on the design of these new machines were Stalin Prize winners V. F. Ris and B. M. Repin, and engineers V. V. Zvyagintsev and M. V. Karpasov.

During that year the plant considerably raised the volume of production and boosted labor productivity 20.5 percent. Turbine shops have been reorganized to series-produce parts, units, and machines, while their output has almost doubled. Modernization in the blade shop has effected a 50-percent cut in the production cycle, and improved the quality of the blades. Development of new norms in finished-part tolerances has reduced metal expenditure 8-10 percent. Rejects have been cut nearly 50 percent. The expenditure of electric energy in arc-furnace operations has been reduced 17 percent. Dozens of regular lathes and turret lathes have been converted to high-speed methods.

Collaboration of scientists with plant workers has been particularly successful, with 105 scientists and 119 engineers participating in the effort. This collaboration is carried out under the auspices of the plant's Scientific Technical Council. Professor N. A. Kuznetsov, of the Leningrad Polytechnical Institute, and Professor A. S. Tochinskiy, have helped the plant solve a series of technical problems. This has resulted in a 45-87 percent increase in the amount of high-speed smelting, a saving of over 500 tons of fuel oil, and a decrease in the cost of production. As a result of research conducted under a lecturer of the Institute of the Refrigeration and Dairy Industry, a more common, more readily available steel can be substituted in some cases for expensive, scarce steel.

Over 300 of the plant's stakhanovites and technicians have studied production methods in other Leningrad enterprises.

In spite of the above achievements, the Party Committee has further tasks to perform with the help of the Scientific Technical Council. The plant dispatcher system is not yet set up satisfactorily, and over-all planning leaves

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something to be desired. Work in the shops proceeds at an erratic pace, slowly at the start of the month and in a sudden burst of speed at the end of the month. The exchange of technical information with other plants has not been completely worked out.

Leningradskaya Pravda, No 83, 7 Apr 50

The Nevskiy Plant imeni Lenin has met the first quarter plan in all indexes, and has put out steam turbines of new design, air blowers, gas blowers, and other machines during that period.

Sovetskaya Latviya, No 88, 13 Apr 50

An innovator at the Nevskiy Plant imeni Lenin has developed an automatic cutoff for lathe motors. While the position of a part is being changed, this switch automatically turns off the motor, so that electricity is not wasted.

The cutoff has proved so successful that similar ones will be put into use in all shops of the plant.

Leningradskaya Pravda, No 90, 15 Apr 50

Improvements in the design of turbomachine reducers at the Nevskiy Plant imeni Lenin should save the plant 10,000 rubles per year.

A new turbocompressor of improved design has been developed at the plant, and the first model should be completed by 1 May. Its rotor has fewer wheels than rotors of former models, and the diameter of the wheels is smaller; the weight of the rotor is therefore considerable less. Over 1,000 kilograms of nonferrous metal should be saved in the manufacture of each one of the turbo-compressors.

Kommunist Tadzhikstana, No 77, 18 Apr 50

The Nevskiy Plant imeni Lenin has shipped out a new heavy steam turbine. Tests have been completed on the 500-kilowatt turbines designed for use in the petroleum industry.

GETS NEW TESTING EQUIPMENT -- Sovetskaya Latviya, No 78, 1 Apr 50

The Laboratory of the Riga Turbine-Machinery Plant has received a complete set of new equipment for determining the quality of molding materials. It has obtained from Moscow a special furnace to be used in chemical analysis of metals, and from the Manometer Plant there, an instrument for determining the hardness of tools.

PRESSES HIGH-SPEED METHODS -- Leningradskaya Pravda, No 79, 2 Apr 50

The number of machine tools on high-speed operation at the Leningrad Plant imeni Stalin has jumped from 160 to 300.

As a result of turning to high-speed methods, the productivity of labor has been increased, the quality of the products improved, and some of the existing equipment mechanized. For example, during 1949 alone, over 50 drive pulleys were changed, and more powerful motors were installed on over 100 machine tools. All new machine tools were set on more solid bedplates.

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LABORATORIES ACTIVE IN BIG PLANTS -- Leningradskaya Pravda, No 79, 2 Apr 50

The laboratory in the Leningrad Kirov Plant has developed a new core binder which does not contain vegetable oil. The plant has also helped workers to reduce the waste in rolling operations $1\frac{1}{2}$ -2 percent.

In the Plant imeni Stalin, the laboratory has developed a number of steels of high durability, capable of prolonged operation under high temperatures. This has been of great importance in improving the quality of turbines.

DESCRIBES GAS TURBINE, ITS USES -- Moskovskaya Pravda, No 49, 16 Apr 50

At a recent lecture in Moscow, Professor V. V. Uvarov, Doctor of Technical Science, spoke on the gas turbine, describing its capabilities and current uses. Open to the public, the lecture was held in the Polytechnical Museum.

Uvarov stated that the gas turbine was gradually coming into use in locomotives, ships, electric power stations, and various chemical plants. Using a much cheaper grade of liquid fuel, the gas turbine could, in certain instances, compete with internal-combustion engines. But a way must be found to run the turbine on hard fuel before it will come into broad application.

The world's first working gas turbine was designed by P. D. Kuz'minsk, in 1897, Uvarov stated. The work of G. I. Zotikov, in 1933, played an important role in the development of the gas turbine, he added.

Plans of gas turbines were shown to the audience.

NEW DEVICE DRASTICALLY REDUCES MACHINING TIME -- Pravda Ukrainy, No 97, 23 Apr 50

High-speed methods are being applied at the Khar'kov Turbogenerator Plant in machining rotors, reduction shafts, pinions, cylinder parts, reduction-gear housing, and other items in individual production. Responsible for the development and application of these methods is Vasiliiy Dmitriyevich Drokin. His most remarkable achievement is an innovation enabling workers to machine a 10-ton rotor in only 166 hours' working time, thought the ordinary norm for such an operation is 698 hours.

This high-speed machining of the rotor was made possible by utilizing three rests at the same time, operating independently of each other. Formerly, such use of the rests was not possible. The rests were mounted on a carriage running on four grooves in the bed, and because of the limited length of the rotor, one forward rest was not used at all, as it had to be moved back beyond the carriage, while the operating length of the other rests was curtailed. Drokin redesigned the base of the carriage, so that it was supported on only two grooves, and the forward rest could then be moved beyond the carriage.

The independent and simultaneous operation of all three rest was effected by equipping them with indicators, showing axial and radial measurements. Utilizing these measuring devices, an operator could set the cutter in any of the rests to the measurement desired without stopping the machine tool and without having to make repeated checking measurements. As a result of these alterations in the machine tool, machining time was cut two-thirds, and time of auxiliary operations was cut in half. Expenditure of electrical energy was sharply reduced.

A delegation from the Leningrad Plant imeni Stalin studied Drokin's methods at the Khar'kov Turbogenerator Plant, and were given instruction in this technology at their own plant by Drokin himself. It is hoped that the method will be applied in Leningrad.

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